

## Comparison of the Results between Standard Discectomy and Microdiscectomy of the Herniated Lumbar Disc

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### – Abstract –

**Study design** : This study is a prospective evaluation of the results of the standard discectomy and microdiscectomy of the herniated lumbar disc.

**Objectives** : The purpose of this study is to compare the clinical results between the standard discectomy and microdiscectomy groups in the herniated lumbar disc.

**Summary of Literature Review** : Many spine surgeons believe that everything that can be accomplished through the standard discectomy can be accomplished more easily with the assistance of the microscope. So the standard laminectomy and discectomy is gradually being replaced by the microdiscectomy.

**Material and Methods** : One hundred and seventy-three patients with lumbar disc herniations were evaluated. Ninety-six patients were operated through the standard method and seventy-seven patients were operated with the aid of the microscope. These operations were taken by one surgeon and the clinical results were undertaken by a doctor who was not involved in the operation using a proven outcome assessment scale.

**Results** : There were significant differences between the standard discectomy and the microdiscectomy groups in terms of complications and revision rates. In microdiscectomy group, clinical result was less favorable than standard discectomy group.

**Conclusion** : In microdiscectomy groups the incidence of infection and rate of revision operation were higher than in standard discectomy groups. The standard discectomy is still thought better than the microdiscectomy in the operative treatment of herniated lumbar disc.

**Key Words** : Lumbar spine, Herniated disc, Standard discectomy, Microdiscectomy

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가 4 , 3-4 5 - 1  
가 2 (Table 1).  
, 106 (protruded disc) 41 (39%), (extruded disc) 39 (37%) (subligamentously extruded disc) 7 (7%), (transligamentously extruded disc) 32 (30%), (sequestered disc) 26 (24%) (Table 2).

77  
, 가 62 , 가 15 .  
20 66 36.6  
12 53 31.4  
가 71 (92%) 3-4  
4 , 4-5 38 , 5 - 1  
29 가 6 (8%) 4-5  
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가 , 3-4 5 - 1  
3 가 1 (Table 1).  
가 5cm 83 34 (41%),  
32 (38%)  
21 (25%),  
11 (13%) , 17 (21%)  
(Table 2).

17,18,21)  
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가 5cm  
11,19,20)  
Kim<sup>9)</sup>

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173 , 12 가  
96 1.  
가 71 , 가 25 ,  
16 63 34.7 , 90 (94%)  
12 57 30.6  
가 86 (90%) 2-3 73 (76%), crossed 30  
1 , 3-4 4 , 4-5 51 , (31%), 17 (18%),  
5 - 1 30 가 10 (10%) 가 72 (75%), 가 37  
3-4 4-5 가 4 , (39%), 59 (61%), 가 17  
4-5 5 - 1 (18%)

**Table 1.** Levels of Operated Disc

Level	Standard Discectomy	Microdiscectomy
	No.(%)	No.(%)
Single	L2-3	1(1)
	L3-4	4(4)
	L4-5	51(53)
	L5-S1	30(32)
Two	L3-4 & L4-5	4(4)
	L4-5 & L5-S1	4(4)
	L3-4 & L5-S1	2(2)
Total	96(100)	77(100)

**Table 2.** Type of Herniation of Disc

Type	Standard Discectomy	Microdiscectomy
	No.(%)	No.(%)
Protrusion	41(39)	34(41)
Extrusion	subligamentous	7(7)
	transligamentous	32(30)
Sequestration	26(24)	17(21)
Total	106(100)	83(100)

**Table 3.** Preoperative Symptoms & Signs

Symptoms	Standard Discectomy	Microdiscectomy
	No.(%)	No.(%)
Low Back Pain	96(100)	77(100)
Radiating Pain	90(94)	76(99)
Signs	No.(%)	No.(%)
	SLR < 70	73(76)
	Crossed SLR	30(31)
	Muscle Spasm	17(18)
	LOM of Back	72(75)
	Motor Deficit	37(39)
	Sensory Deficit	59(61)
	Reflex Deficit	17(18)

**Table 4.** Postoperative Symptoms & Signs

Symptoms	Standard Discectomy	Microdiscectomy
	No.(%)	No.(%)
Low Back Pain	43(45)	34(44)
Radiating Pain	23(24)	16(21)
Signs	No.(%)	No.(%)
	SLR < 70	8(8)
	Crossed SLR	2(2)
	Muscle Spasm	1(1)
	LOM of Back	8(8)
	Motor Deficit	6(6)
	Sensory Deficit	13(14)
	Reflex Deficit	3(3)

, 76 (99%)  
 . 74  
 (96%), crossed 17 (22%),  
 가 8 (10%),  
 가 44 (57%), 가 28  
 (36%), 66 (86%), 가 20  
 (26%) (Table 3).

, 43 (45%)  
 ,  
 23 (24%)  
 .  
 8 (8%), crossed  
 2 (2%),  
 가 1 (1%), 가 8 (8%),  
 가 6 (6%), 13 (14%)  
 , 3 (3%)  
 , 34 (44%)  
 ,  
 16 (21%)  
 .  
 9 (12%), crossed 가  
 3 (4%), 가 8 (10%),  
 가 5 (6%), 14 (18%)  
 (Table 4).  
 2.  
 Kim<sup>9)</sup>  
 ,  
 35 (36%), 가 53  
 (55%), 가 5 (5%), 3 (3%)  
 ,  
 29  
 (38%), 가 33 (43%), 가 5 (6%), 10  
 (13%) (Table 5).  
 3 ,  
 , 가 1 (Table 6),  
 10  
 , 5 ,  
 가 3 , 가  
 2 (Table 7).

**Table 5.** Clinical Results according to Kim’s Criteria

	Standard	Micro	Total
	No.(%)	No.(%)	No.(%)
(Excellent)	35(36%)	29(38%)	64(37%)
(Good)	53(55%)	33(43%)	86(50%)
(Fair)	5(5%)	5(6%)	10(6%)
(Poor)	3(3%)	10(13%)	13(7%)
Total	96	77	173

**Table 6.** Analysis of 'Poor' Cases in Standard Discectomy

Cause	No. of Cases
Deep Infection	1
Failed Back Surgery Syndrome	1
Postop. Stenosis	1

**Table 7.** Analysis of 'Poor' Cases in Microdiscectomy

Cause	No. of Cases
Deep Infection	5
Insufficient Removal	3
Postop. Stenosis	2

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 가 77 가 96 , 12  
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 : Kim 36%, 가 55%,  
 가 5%, 3% , 38%, 가 43%, 가 6%,  
 13% ,  
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가 685